Fatal Pneumococcal Septic Shock in a Patient with Ulcerative Colitis

Splenectomy and functional asplenia are associated with an increased risk of primary bacteremia, particularly that due to Streptococcus pneumoniae and Haemophilus influenzae. Rapidly progressive and intractable shock with disseminated intravascular coagulation are prevented only by early appropriate antimicrobial therapy. We report a case of rapidly fatal pneumococcal septic shock in a patient with ulcerative colitis.

An 18-year-old male was admitted to the intensive care unit at our hospital in severe septic shock. His medical history was unremarkable except for a biopsy-proven diagnosis of ulcerative colitis, for which he received maintenance therapy with oral and rectal 5-aminosaliclyates. Twelve hours before admission he experienced the acute onset of nausea, vomiting, and diarrhea with high fever and shaking chills. On arrival in the intensive care unit, the patient was in shock and his temperature was 39.4°C. Rapidly progressive petechiae and purpura were visible over the entire body. Examination of the heart, lungs, and abdomen revealed no abnormalities.

References

Laboratory tests revealed the following values: hemoglobin, 10.8 g/dL (6.4 mmol/L), with an RBC smear showing several Howell-Jolly bodies and burr cells; WBCs, 2.7 X 10^9/L; thrombocytes, 36 X 10^9/L, with coagulation tests indicating severe disseminated intravascular coagulation; glucose, 14.3 mg/dL (0.8 mmol/L); creatinine, 3.9 mg/dL (345 µmol/L), and serum lactate, 99.2 mg/dL (11.9 mmol/L). A chest roentgenogram showed no infiltrates. Blood cultures became positive for S. pneumoniae.

Despite aggressive treatment including high-dose penicillin, the patient died 10 hours later with irreversible shock. Postmortem examination showed a small spleen weighing only 20 g (normal weight, ±200 g). Microscopic examination revealed a complete absence of red pulp, with a general increase in fibrous tissue. Although clinical signs of a relapse had been absent, the entire colon showed signs of moderate to severe inflammation.

This rapidly fatal infection with S. pneumoniae in a patient with ulcerative colitis is suggestive of an functional spleen. This diagnosis is supported by the presence of Howell-Jolly bodies and burr cells in the peripheral blood smear. At postmortem examination the spleen was extremely small (20 g) and contained no red pulp. The increase in fibrosis points to an acquired form of hyposplenism.

The association between functional hyposplenism and ulcerative colitis was first described in 1974 [1-3]. In 1978 Ryan and co-workers presented the results of a prospective study on splenic function in cases of inflammatory bowel disease [4]. Thirteen (37%) of the patients with ulcerative colitis had hyposplenism, as compared with only one patient (5%) with Crohn’s disease. The presence of Howell-Jolly bodies in the blood film was associated with severe and extensive colitis. Pneumococcal septicemia developed in one patient on day 3 after a panproctocollectomy.

In a recent study by Muller and co-workers, six of 29 patients (21%) with ulcerative colitis showed signs of functional hyposplenism [5]. All but one had pancolitis in acute relapse. Patients experiencing a severe relapse had significantly smaller spleens than those of patients whose disease was quiescent or controlled. In contrast, Pereira and co-workers found no relation between spleen size and the site or extent of the inflammation in 116 patients with inflammatory bowel disease [6]. However, there was a relation between small spleen size and infectious complications after surgery.

The etiology of hyposplenism remains uncertain. The hypothesis that circulating immune complexes may block splenic reticuloendothelial function has not been proved [7].

Besides the patient described by Ryan and coworkers [4], we could find only one other patient with fulminant pneumococcal sepsis and ulcerative colitis described in the literature [8]. In this case the spleen weighed only 32 g and showed extensive atrophy of both T and B cell areas.

Considering the prevalence of ulcerative colitis, we feel that fulminant pneumococcal sepsis must be a relatively rare complication. Therefore, we do not think that all patients with ulcerative colitis should undergo prophylactic pneumococcal vaccination, although it is reasonable to consider vaccination of a patient when persistent signs of hyposplenism are evident in the peripheral blood smear. However, every patient with ulcerative colitis who presents with circulatory collapse and signs of sepsis should immediately be treated for a presumed fulminant pneumococcal infection.

References

Pyomyositis as the Sole Manifestation of Disseminated Gonococcal Infection: Case Report and Review

Disseminated gonococcal infection (DGI) occurs in ~0.5%–3.0% of all cases of gonorrhea [1]. Reports of extrapelvic skeletal muscle abscess caused by Neisseria gonorrhoeae are rare. We report a case of DGI presenting as a mass in the right biceps brachii.

A 16-year-old woman presented to the emergency department complaining of right shoulder pain that had been preceded by symptoms of respiratory tract infection, generalized arthralgia, and myalgia. She denied any fever, chills, dysuria, or vaginal discharge. Physical examination revealed tenderness over the right bicipital groove. A firm, indurated, tender mass was noted in the right biceps. Extension lag was present at the elbow. Axillary adenopathy was absent. Laboratory studies revealed a WBC count of 16,800/mm³. A urethral culture was negative for N. gonorrhoeae. A bone scan and plain films of the shoulder did not show any abnormalities. MRI showed a fluid collection in the biceps and marked inflammation of surrounding tissues (figure 1).